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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,699	12/01/2003	Francois X. Prinz	24317/82501	2551

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EXAMINER

BEHM, HARRY RAYMOND

ART UNIT	PAPER NUMBER
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2838

DATE MAILED: 04/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/725,699

Applicant(s)

PRINZ ET AL.

Examiner

Harry Behm

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2,3 and 5-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-8, 15, 17 and 18 is/are allowed.
- 6) ☒ Claim(s) 2, 9 and 16 is/are rejected.
- 7) ☒ Claim(s) 3 and 10-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 May 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

Applicants requested the objection to the drawings be held in abeyance. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

The drawings are objected to because it is unclear in Fig. 1A – Fig. 1D whether voltage feedback or the rate of change of voltage with respect to time is feedback. In Fig. 3 ‘bh’ and ‘%8’ are not defined. Furthermore, signals A2, B2, C2 and D2 are not properly defined. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the

examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

Claim 2 is objected to because of the following informalities: The issuance of pulses is blocked, not retarded; the comparator does not operate in a cyclical fashion; the issuance of pulses is blanked by a logic gate, not by the comparator. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The comparator retarding the pulse issued by the oscillator was not disclosed. It would appear "the pulse" in the last paragraph is intended to be a different pulse than the pulse from the oscillator.

Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it

pertains, or with which it is most nearly connected, to make and/or use the invention.

The first and second comparators appear to be analog comparators and no rate is disclosed for the comparison between the output voltage and the reference voltage. It would appear the applicant intended to claim a first comparator that compares the output voltage to a reference voltage of a first value and a second comparator that compares the output voltage to a second reference voltage which is used to select between a first and second rate.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Duffy (US 2002/0171985) in view of Reilly (US 6,593,864).

With respect to Claim 2, Duffy discloses a voltage converter with an ATR where a comparator (Fig. 10 over voltage comparator) turns all the upper transistors off (paragraph 77) to block the issuance of PWM pulses when the comparator detects that an output voltage is higher than a reference voltage (Fig. 10 REFERENCE). Duffy does not disclose the PWM techniques to be used as this is well known in the art. Reilly teaches the use of a PWM, where an oscillator (Fig. 3 31) issues a pulse; a duty cycle generator (Fig. 3 22'), wherein the pulse is used to load a numerical value [count] stored in a memory (Fig. 3 30) of the system into the duty cycle generator; a digital counter

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(Fig. 3 30) that stores and alters a duty cycle; a first comparator (Fig. 3 34) that determines how the duty cycle must be modified [UP/DOWN]; and an algorithm generator producing an algorithm that determines the rate of change of the duty cycle [since a duty cycle is determined, the rate of change of the duty cycle is also determined]. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the PWM techniques of Reilly with the window comparators of Duffy. The reason for doing so is Reilly illustrates a typical PWM controller, which Duffy suggests "any suitable control mode such as, Pulse Width Modulation (PWM)" may be used.

#### ***Response to Amendment***

Applicant stated claim 16 depends from claim 15. Claim 16 is independent and does not depend on claim 15.

#### ***Allowable Subject Matter***

Claims 2, 9 and 16 would be allowable if worded as in claim 7 to claim the frequency of alteration of the duty cycle was modified in response to a change in the load.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

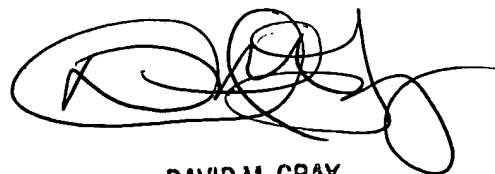
#### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Muratov (US 6,621,256) discloses a converter with a hysteretic mode and PWM mode. Criscione (US 6,225,794) discloses a converter with logic implemented with comparators.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Behm whose telephone number is 571-272-8929. The examiner can normally be reached on Business EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on 571-272-8919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'David M. Gray', with a large, stylized flourish extending from the end of the signature.

DAVID M. GRAY  
PRIMARY EXAMINER